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NOTES ON GEOGRAPHIC DISTRIBUTION

Pisces, Perciformes, Cichlidae, *Laetacara dorsigera* (Heckel, 1840): Distribution extension and first record for Uruguay River basin, and state of Rio Grande do Sul, southern Brazil

Luis Esteban Krause Lanés [1*], Leonardo Maltchik [1] and Carlos Alberto S. de Lucena [2]

1 Universidade do Vale do Rio dos Sinos, Laboratório de Ecologia e Conservação de Ecossistemas Aquáticos (LECEA). Avenida Unisinos 950, Bairro Cristo Rei. CEP 93022-000. São Leopoldo, RS, Brazil.
2 Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Laboratório de Ictiologia. Avenida Ipiranga 6681, prédio 40. CEP 90619-900. Porto Alegre, RS, Brazil.
* Corresponding author. E-mail: *lelanes@gmail.com*

ABSTRACT: The present study records for the first time the small cichlidae fish *Laetacara dorsigera* (Heckel, 1840) at Uruguay River basin and state of Rio Grande do Sul, southern Brazil, previously known from Amazon, Paraná and Paraguay River basins. Although the ichthyofauna of Uruguay River basin is relatively well known, this record suggests that there are still unexplored environments, such as wetlands, where there may be species not yet reported, and found in other hydrographic systems.

The South American cichlid genus *Laetacara* Kullander, a component of the tribe Cichlasomatini, subfamily Cichlinae (Smith *et al.* 2008; López-Fernández *et al.* 2010), is characterized by small size (max. SL 110 mm), and comprises currently six species [*L. dorsigera*, *L. flavilabris* (Cope, 1870), *L. thayeri* (Steindachner, 1875), *L. curviceps* (Ahl, 1923), *L. fulvipinnis* Staeck and Schindler, 2007 and *L. araguaiae* Ottoni and Costa, 2009)] distributed in Argentina, Brazil, Ecuador, Paraguay, Peru and Venezuela (Kullander 1986; Casciotta 1998; Staeck and Schindler 2007; Ottoni and Costa 2009; Ottoni *et al.* 2009). Currently the genus is diagnosed by a single synapomorphy based on the morphology of the hyoid, consisting of a deep notch on the dorsal margin of the anterior cerotohyal (Kullander 1986: Figure 149; Kullander 1998). Its monophyly was recently confirmed by molecular analysis (Musilová *et al.* 2008).

Laetacara dorsigera (Heckel, 1840) (Figure 1) was recently re-described by Ottoni and Costa (2009), and the known distribution of the species, whose type locality is Villa Maria, Paraguay, Paraguay River basin, include Amazon River basin, in the Guaporé River drainage, Paraná River basin, in the Paraguay River drainage in Brazil and Paraguay, and middle Paraná River drainage in Argentina (Kullander 2003) (Figure 2A).

FIGURE 1. Female of *Laetacara dorsigera*, MCP 44511, 37.3 mm SL, captured in Uruguay River basin, state of Rio Grande do Sul, southern Brazil.

An adult female of *L. dorsigera* (SL 37.3 mm) was collected with hand nets, during a field trip of a research project conducted by the Laboratório de Ecologia e Conservação de Ecossistemas Aquáticos, Universidade do Vale do Rio dos Sinos, aimed to know the biological diversity of wetlands in southern Brazil. The material was fixed in 10 % formalin, later transferred into 70 % ethanol, and deposited at Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre (MCP 44511). Measurements were made with a digital caliper reading to the nearest 0.1 mm.

The species was collected on October 13, 2002, in state of Rio Grande do Sul, southern Brazil, in small tributary floodplains of Uruguay River basin (Figure 2B). The site of occurrence of the species (29°30'34.1" S, 56°43'11.8" W, 126 m above sea level) is a permanent palustrine wetland area, covered by dense macrophyte vegetation (Figure 3), located in municipality of Uruguaiana, district of João Arregui.

Although only one individual of *L. dorsigera* has been collected, it is unlikely that its occurrence in the Uruguay River Basin, state of Rio Grande do Sul, is due to the introduction for hobbyists or escapes from ornamental fish ponds. According to Roubach *et al.* (2003) southern Brazil differs from other regions of the country for its subtropical climate, and consequently the development of aquaculture is different. Unlike other regions where the ornamental tropical fish industry is developed (Roubach *et al.* 2003; Magalhães and Jacobi 2008), in southern Brazil, due to its lower average temperature, the fish culture is primarily based on obtaining animal protein through the cultivation of exotic fish

species well adapted to the low winter water temperatures (Garcia *et al.* 2008; Baldisserotto 2009). Furthermore, among the records of invasive species in natural environments are not included in the species of ornamental fish (Garcia *et al.* 2004; Querol *et al.* 2005; Leal *et al.* 2009; Vitule 2009). Therefore we think that *L. dorsigera* occurs naturally in Rio Grande do Sul, and the fact that only one individual was found, seems to be attributed to the rarity of the species in the Uruguay River basin, and limitations of the sampling method used at study.

Finally this study extends the distribution of *L. dorsigera,* and is the first record of the species at Uruguay River basin and state of Rio Grande do Sul, southern Brazil. This record suggests that although the Uruguay River basin is relatively well known, there are still unexplored environments, where there may be species not yet reported, and found in other hydrographic systems, especially in the Paraná and Paraguay River drainages.

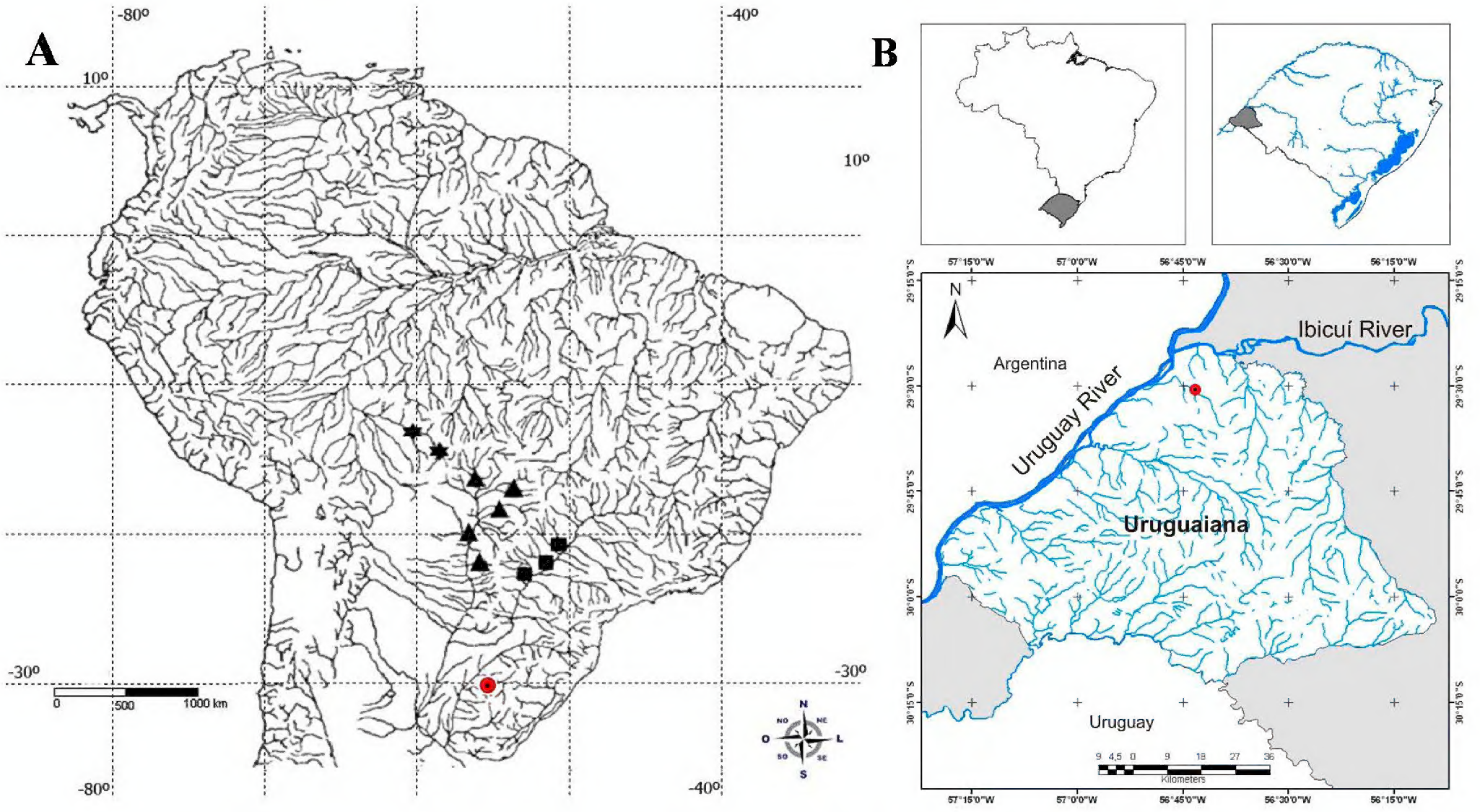

FIGURE 2. (A) Previous known distribution of *Laetacara dorsigera* including Amazon River basin, in the Guaporé River drainage ★; Paraná ■ and Paraguay ▲ River basins, and the current record ●. Modified from Ottoni and Costa (2009). (B) Map detailing the occurrence of *Laetacara dorsigera* in small tributary floodplains of Uruguay River basin, municipality of Uruguaiana, state of Rio Grande do Sul, southern Brazil. Author: H. P. B. Neto. Source: Modified from Embrapa Monitoramento por Satélite (2005) and FEPAM (2005).

FIGURE 3. Sampling site of *Laetacara dorsigera* in Uruguay River floodplains, Rio Grande do Sul, southern Brazil.

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